

**1995 Observations of Martian Dust Storms Using the *Hubble Space Telescope***

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We present HST multispectral observations which reveal the presence of discrete dust activity in the north polar region and the Hellas basin after the 1995 opposition (April 8 and August 21, 1995). These images represent the first unambiguous identification of dust storms over the 1990-1995 period of the Mars HST observing program. The core component of our analysis is a multiple scattering radiative transfer model of the HST absolute photometry. Using cross sectional slices through the regions of interest, we are able to place lower limits on the atmospheric dust loading associated with the local dust storms. Our emphasis on the lower limit is driven by the desire to minimize the effects of the considerable uncertainties in our knowledge of the model inputs, such as surface reflectance, cloud particle phase functions, and dust radiative properties. In addition, the use of absolute photometry provides us with the means to easily derive Lambert albedos for the northern residual cap and compare them with previous efforts which used the similar assumptions (i.e. no clouds or dust). Our results illustrate the significant utility of HST for synoptic monitoring of Mars. The extended wavelength coverage and high spatial resolution fill a crucial gap between the data provided by ground-based efforts and those by past and future spacecraft missions.

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